# Intro Stat- Measures of Center & Spread NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Put all work on separate paper!

1. Consider the following set of homerun distances (in feet) to center field in 13 ballparks:

*{387, 400, 400, 410, 410, 410, 414, 415, 420, 420, 421, 457, 461}.*

1. Find the mean, median, Q1, Q3, min, max, IQR, and standard deviation.
2. Is the data skewed? How did you tell?
3. Are there any outliers? Show full work!
4. Draw a boxplot of the data.
5. Suppose that the numbers of unnecessary procedures recommended by five doctors in a 1-month period are given by the set {2, 2, 8, 10, 18}. If we ask a 6th doctor and find out that they recommend 35 procedures, how will the median and mean be affected? How about the standard deviation?
6. Suppose the salaries (in dollars) of six employees are: 8000, 10000, 15000, 16000, 20000 and 39000.
7. What are the median and mean salaries?
8. Why are they such different numbers?
9. Which measure of center is the better pick for this data? Why?
10. Find the standard deviation
11. The following are quiz scores from two Algebra 1 Classes.

***Class 1: 68, 93, 53, 100, 77, 86, 91, 88, 72, 74, 66, 82*** *and* ***Class 2: 77, 91, 82, 68, 75, 72, 85, 65, 70, 79, 94, 86***

1. Compare the means of the class scores. Which would you rather be in?
2. Compare the standard deviations. Which class was more consistent in their scores?
3. Based solely on the mean and median given, decide on the shape of the distribution

(a) Mean = 100 (b) Mean = 20 (c) Mean = 934

Median = 98 Median = 41 Median = 850

1. Look back at #5. Based on the shape of each distribution, which measure of center & spread would you use to describe the distribution? *(mean & std. deviation & range* ***OR*** *median & IQR & range)*
2. Give a set of numbers that would have a standard deviation of 0 units.
3. Using the list TST1F (list of test scores for females, in percent), do the following:
   1. Create a histogram & draw on the paper
   2. Find the summary statistics (min, Q1, Med, Q3, Max, Mean, Std. dev, IQR, n)
   3. Describe the distribution (shape, center spread, any unusual features)
4. Using the list TST1M (list of test scores for males, in percent), do the following:
   1. Create a histogram & draw on the paper
   2. Find the summary statistics (min, Q1, Med, Q3, Max, Mean, Std. dev, IQR, n)
   3. Describe the distribution (shape, center spread, any unusual features)

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   1. Create a histogram & draw on the paper
   2. Find the summary statistics (min, Q1, Med, Q3, Max, Mean, Std. dev, IQR, n)
   3. Describe the distribution (shape, center spread, any unusual features)